



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,857	04/16/2004	Arnold Schneider	DFS-172-A	2090

22825 7590 07/26/2005  
WILLIAM M HANLON, JR  
YOUNG & BASILE, PC  
3001 WEST BIG BEAVER ROAD  
SUITE 624  
TROY, MI 48084-3107

EXAMINER

SELLS, JAMES D

ART UNIT PAPER NUMBER

1734

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/826,857

**Applicant(s)**

SCHNEIDER, ARNOLD

**Examiner**

James Sells

**Art Unit**

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-7, 10 and 13-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nayar et al (US Patent 5,707,483) in view of Couillard et al (US Patent 6,454,890) in further view of McNichols et al (US Patent 6,547,903).

Nayar discloses a rotary acoustic horn. As shown in Fig. 3, rotary horn 10 has weld face 16 and has a weld width of up to 12.7 cm (5 in). At col. 2, lines 38-41, Nayar discloses tat a half wavelength horn has a total length of about 12.7 cm (5 in).

However, Nayar et al does not disclose the anvil, transformer or converter as claimed by the applicant. Regarding these differences, the applicant is directed to the reference of Couillard et al.

Couillard discloses an ultrasonic bonding apparatus. As shown in Figs. 1-2, the apparatus comprises rotary ultrasonic horns 24 and 34, which cooperate with rotary anvils 26 and 36. Drive mechanism 68, comprising an ultrasonic generator, boosters, amplifiers, and drive assembly provide the desired rotation and ultrasonic excitation required (see col. 11, line 62 through col. 12, line 65). It is the examiner's position that

Art Unit: 1734

the various components of this drive mechanism function as applicant's claimed transformer and converter.

It would have been obvious to one having ordinary skill in the art to employ an anvil and drive mechanism, as taught by Couillard, in the apparatus of Nayar in order to facilitate welding or bonding of various materials.

However, Nayar does not disclose the two transformers and converters as claimed by the applicant. Regarding these differences, the applicant is directed to the reference of McNichols et al.

McNichols discloses a rotary ultrasonic horn. As shown in Fig. 13a, the system comprises first and second ultrasonic exciters 82 and 84 and first and second ultrasonic boosters 74 and 76 positioned on opposite sides of rotary ultrasonic horn 28.

It would have been obvious to one having ordinary skill in the art to employ ultrasonic exciters and boosters on opposite sides of a rotary ultrasonic horn, as taught by McNichols, in the rotary horn of Nayar in order to provide stronger, more reliable energy to the horn.

Regarding claim 5, the weld face 16 of rotary horn 10 disclosed by Nayar appears to have a smooth outer surface in the manner claimed by the applicant.

Regarding claims 10 and 13-22, it is the examiner's position that the specific configuration of the rotation roll (i.e. smooth or patterned, hollow shaft with trunnions, offset tandem, waisted, thicker diameter, swelling, skewed axis) and the anvil (i.e. smooth or patterned, knife or blade) are within the purview of one having ordinary skill in the art and would have been obvious to employ in the device of Nayar in view of

Art Unit: 1734

Couillard as a matter of design choice based upon desired physical properties of the articles being manufactured.

3. Claims 2 and 8-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nayar et al in view of Couillard in further view of McNichols as described above in paragraph 2 in view of Mlinar et al (US Patent 5,976,316).

Mlinar discloses a mounting system for a rotary acoustic horn. As shown in the figures, the apparatus comprises rotary ultrasonic horn 10 and mounting system 14. Mounting system 14 comprises bearings 40 which permit rotation of the horn 10 relative to housing 16.

It would have been obvious to one having ordinary skill in the art to employ bearings, as taught by Mlinar, in the apparatus of Nayar as described above in order to facilitate rotation of the rotary ultrasonic horn.

Regarding claims 8-12, it is the examiner's position that the adjustable pressure application and heat or cooling system are within the purview of one having ordinary skill in the art and would have been obvious to employ in the device of Nayar in view of Mlinar as a matter of design choice based upon desired physical properties of the articles being manufactured.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-2 and 4-22 have been considered but are moot in view of the new ground(s) of rejection.

***Telephone/Fax***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Sells whose telephone number is (571) 272-1237. The examiner can normally be reached on Monday-Friday between 9:30 AM and 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached at (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1734

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

A handwritten signature in black ink, appearing to read 'JSell', written over a horizontal line.

**JAMES SELLS  
PRIMARY EXAMINER  
TECH. CENTER 1700**